

SCHOOL OF PHARMACY

OF THE

UNIVERSITY OF MICHIGAN

REGISTER OF ALUMNI

AND

ANNUAL ANNOUNCEMENT.

TWENTY-SIXTH YEAR. 1893-1894.

ANN ARBOR, MICHIGAN :

PUBLISHED BY THE UNIVERSITY.

1893.



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THE COURIER OFFICE, PRINTERS AND BINDERS,  
ANN ARBOR, MICH.  
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FACULTY.*

JAMES B. ANGELL, LL.D.,
PRESIDENT.

ALBERT B. PRESCOTT, PH.D., M.D.,
Director of the Chemical Laboratory, *Professor of Organic Chemistry.*
DEAN OF THE FACULTY.

WILLIAM H. PETTEE, A.M.,
Professor of Mineralogy and Economic Geology, *in charge of Crystallography.*

VOLNEY M. SPALDING, A.B.,
Professor of Botany.

OTIS C. JOHNSON, A.M., PH.C.,
Professor of Applied Chemistry, in charge of Qualitative Analysis.

PAUL C. FREER, PH.D., M.D.,
Professor of General Chemistry.

ALVISO B. STEVENS, PH.C.,
Assistant Professor of Pharmacy.
SECRETARY OF THE FACULTY.

EDWARD D. CAMPBELL, B.S.,
Professor of Metallurgical Chemistry, *in charge of Quantitative Analysis.*

DAVID M. LICHTY, M.S.,
Instructor in General Chemistry, *in charge of Physics.*

* For the collegiate year 1893-94. Members of the Faculty of this Department are officers of the University, usually with duties as members of the Faculties of other Departments, and the official titles here given are those of University appointment for all duties. Services proper to the School of Pharmacy are designated in italics.

JULIUS O. SCHLOTTERBECK, B.S., PH.C.,

Instructor in Pharmacognosy and in Botany, in Charge of Materia Medica,

WILLIAM F. EDWARDS, B.S.,

Accountant and Instructor,

MOSES GOMBERG, B.S.,

Instructor in Organic Chemistry,

WILLIAM H. ANDREWS,

Assistant in Quantitative Analysis.

PERRY F. TROWBRIDGE, PH.B.,

Assistant in Qualitative Analysis.

L. D. HAVENHILL, PH.C.

Assistant in Pharmacy.

ANNOUNCEMENT FOR 1893-94.

THE EDUCATIONAL SCOPE OF THE SCHOOL.—This Department of the University gives training for all branches of pharmacy and for various chemical pursuits of the present time. It makes a well-grounded preparation for service as a manufacturing chemist or as an analyst. The graduate is assured a thorough qualification for the prescription table, and for the most responsible positions in pharmacy. He is fitted to act as the chemist of the medical profession. In respect to the discipline of both the intellectual and the executive powers, the work of the School offers decided advantages in the methods of the laboratory and the classroom.

THE CALL FOR CHEMISTS.—In reply to all inquiries as to what demand there is for the services of the graduates of this School, and what opportunities are before them in chemistry, in pharmacy, and in business, THE REGISTER OF ALUMNI for the past four years, is presented in this issue. This directory is carefully revised each year. It is made to show as nearly as possible what each graduate is now doing, and to give some mention of what he has been doing since he left college. There is a published Register of all graduates since the degree of Pharmaceutical Chemist was first conferred, in 1869. As a professional directory it is in constant use by those who obtain the services of chemists and pharmacists. There have been six hundred and fifty-seven graduates in twenty-four years. As a rule the alumni engage in chemistry and pharmacy, beginning without delay, and in due time attaining to posts of credit. It can be seen by each year's issue of the Register how generally the

members of the last class, a half year out of college, are already actively engaged in their chosen vocation. And the lists of the classes give proof that the training of this School is adapted to meet the wants of the present time. Moreover that the work of the School really gives its students a lasting love of chemical pursuits,—if it did not a larger number would be diverted to the many avenues of business opening everywhere. It is true of this School that the percentage of its graduates who succeed in the practice of their profession is greater than the percentage of its students who succeed in becoming graduates.

THE UTILITY OF CHEMICAL TRAINING.—Such is the fertility of artificial production everywhere that commerce cannot go on without the analytical chemist. And nowhere is the ability of the well-trained analyst needed more than it is in pharmacy. Therefore it is that the graduates of this School, qualified as chemists, practiced in qualitative, quantitative, organic, and microscopical work, find so prompt a demand for their services.

THE EXTENT OF THE REQUIRED WORK.—As detailed in the following pages, the work of the School is conducted in lectures, recitations, and laboratory practice, organized in a progressive course of at least two collegiate years of nine months each, October to June inclusive, required for graduation. During the college year the student has no time at his disposal for service in a drug store. The required work is by no means such as any student can accomplish in short terms of five months, or while serving in a pharmacy. Those likely to fail in completing the course in two years are permitted, if they are diligent, to arrange the work for three years.

THE COURSE OF THREE YEARS, arranged from the beginning, is more especially advisory for those preparing for special positions in chemical manufacture, or for service as an analytical chemist. Those who graduate at the expiration of two years are offered a year of post-graduate work.

THE LABORATORIES AND THE WORK REQUIRED IN THEM.—Of the laboratories of the University, those of chemistry, microscopic botany, pharmacy, and pharmacognosy are used by all the students of this School. All are held to work in the laboratories, from four to six hours daily throughout the course.

THE LIBRARY.—The library of the School is shelved with the General Library of the University. It is open to readers from 9 A. M., to 9:30 P. M., daily. The latest works of reference in pharmacy, chemistry, and related sciences, as well as the current periodicals of the profession, are accessible to the student. For the demands of original research all the important repositories of science, in their complete sets, are open to the reader.

UNIVERSITY PRIVILEGES.—Admission to classes and laboratories in other Departments of the University is granted to students of the Department of Pharmacy, without additional expense, provided the applicants for such permission be found qualified to take the desired studies, and provided students shall not undertake more work than they can properly perform. About one-half of the obligatory studies of the School of Pharmacy can be obtained in advance in the Department of Literature, Science, and the Arts; or, if obtained in the former, may receive credit upon admission into the latter. Graduates in pharmacy at this School are qualified in the larger portion of the work of the first year in the Department of Medicine and Surgery.

FACILITIES FOR PRACTICING PHARMACISTS. PARTIAL COURSES, OPPORTUNITIES FOR RESEARCH.—Pharmacists who desire to pursue certain branches of study for a limited time in this School may avail themselves of any and all of its facilities, with the helpful coöperation of the Faculty, and subject only to indispensable regulations. Those of responsible age and service can be granted full hours in the laboratories, the use of apparatus, admission to such lectures as may be desired, references to authorities in the library, and

appliances for investigation. *Graduates in pharmacy at other schools* may select studies and adapt their work to their individual purposes. *Short terms of study* can be provided for in various ways, under the organization of numerous courses in the University. Students able to take only *One College Year* at the School obtain in this time very substantial advantages for the practice of pharmacy, as follows: (1) lectures on general chemistry, (2) lectures and recitations on pharmacy, (3) a thorough laboratory course in qualitative analysis and study of the action of chemicals on each other, (4) a full laboratory course in pharmacopœial preparations, and (5) a course in botany and pharmacognosy, with a drill upon the crude drugs of the materia medica. Those taking a partial course in the School are subject to the regulation of their studies by the Faculty, and are required to do satisfactory work while they remain, the same as candidates for graduation.

PREPARATION FOR THE STATE EXAMINATIONS IN PHARMACY.—The University grants opportunities to make preparation for the examinations of the boards of pharmacy. The pharmaceutical and chemical lectures and laboratory courses constantly going on, the museums and libraries open every day, and the personal direction granted to every learner, give exceptional advantages to those who would devote themselves wholly to special studies for a given time. Thus in pharmacognosy the learner has access to the classified collections of crude drugs and pharmaceuticals, taking one after another in hand for direct acquaintance. And every encouragement is given to the learner, to help him *to study for the better practice of pharmacy, not narrowly for an examination*. With well directed study the learner becomes able to take a State examination not only without fear but with satisfaction and benefit. To this end the courses of study named in the paragraph last above are commended. The full course for graduation, much wider than the State examinations, is certainly the best means of preparing for them.

THE REQUIREMENTS FOR ADMISSION.—Subject to the regulations above referred to, the University opens its facilities in the Department of Pharmacy to any pharmacist of sufficient age, who has fairly entered into practice, and to persons of other professional experience, (as definitely stipulated on page 12), without the requirement of entrance examination, other than that in the use of our language. But the University does not confer a degree or diploma in pharmacy upon any person who has not passed the prescribed entrance examination, or completed a good high school course, as detailed on page 12, and it is necessary to fulfil this requirement before entering as a candidate for graduation. The entrance examination, in effect, requires the completed course in a high school of good standing, and graduates from any one of the full or four-year courses of such high schools are received upon their diplomas. Those who have their preparation before them are advised that, in general, the “scientific course” of the high school, with Latin and German, will be the most helpful. If the entrance examination is to be taken, the abatement in a part of the Latin and German, for those who have had professional experience, is a limited concession extended to those already in the profession, who have passed by the opportunity for completion of high school studies. Applicants are assured that little can be done by any student during college time in making up deficiencies in the studies required for admission.

ADMISSION TO THE SCHOOL FOR A SPECIAL COURSE is to be obtained only under the requirements defined on page 12, without modification. That is, persons of professional experience are admissible for work in the school, without entrance examinations, except one in English, while others are required to take all the examinations, unless they have high school credentials. Graduates in pharmacy at other schools, and graduates in medicine are received without examination.

THE SCHOOL YEAR BEGINS OCTOBER 1, FOR ALL STUDENTS; and closes on Commencement day, Thursday following the last Wednesday in June. Students of the first year are released the second Friday before Commencement. For special purposes admission may be granted at the beginning of the second semester, February 17, 1894. For the full regular work admission cannot be granted at any other time than at the opening of the first or the second semester, as students are instructed in classes in progressive order. For investigations, students can be received at any time when there is room in the laboratories.

AS TO BUSINESS EXPERIENCE.—The school provides training in pharmaceutical science, not practice in commercial business. Manifestly the work of a professional college is not a substitute for the experience of a pursuit in life. And responsible service in pharmacy is dependent upon both business qualifications and professional competence, each of which is necessary. This school assumes no responsibility for mercantile training, or for experience in the business of pharmacy. A term of service in a drug store has a value which is subject to much variation, a value best estimated by the business pharmacist himself, without the intervention of the college. Therefore experience in the business of pharmacy is not made a requirement for the degree of Pharmaceutical Chemist. When advice is asked respecting the best time in which to take the college work, it is to be said that there are advantages in obtaining some practical training in a drug store before entering the college course, and there are other advantages in having the college course before giving a very long term of service in pharmacy. A year of pharmaceutical experience after college is worth several years of the same before college. But until experience be obtained the graduate in pharmacy is not fully ready for responsible service in commercial practice.

I. CALENDAR OF THE COLLEGIATE YEAR.

1893.

September	29-30.	<i>Examination for admission</i> , beginning with all applicants at 9 A. M. of the 29th.
October	1.	FIRST SEMESTER BEGINS.
NOVEMBER	—	Thanksgiving Recess of three days.
December	22.	(Evening.) Holiday Vacation begins.

1894.

January	9.	Exercises resumed.
February	16.	(Evening.) FIRST SEMESTER CLOSES.
February	19.	SECOND SEMESTER BEGINS.
April	13.	(Evening.) Recess begins, ending April 23, (evening.)
June	27.	Alumni Day; Classes of 1869 to 1894.
June	28.	COMMENCEMENT IN ALL THE DEPARTMENTS OF THE UNIVERSITY.

II. REQUIREMENTS FOR ADMISSION.

All applicants for admission must be at least eighteen years of age.

It is advisory to obtain at least a year of practical training in a drug store before entering the college course in pharmacy. The required work in the school leaves the student no time for an engagement in a drug store during the college year.

Applicants who bring diplomas of graduation from standard high schools,* or certificates of good standing in institutions of the collegiate grade, are admitted without examination.

Applicants who bring evidence of having been engaged in the practice of pharmacy for at least two years may be admitted upon examination in the following branches:

*Including those named on pages 43-46 of the University Calendar, and others giving good instruction in all the studies named below.

1. ENGLISH.—Each candidate will be examined as to his ability to write English, correct in orthography, punctuation, the use of capitals, grammatical construction, and rhetorical fitness.

2. MATHEMATICS.—*Arithmetic*.—Fundamental Rules. Fractions (Common and Decimal), Denominate Numbers, Percentage, Proportion, Involution and Evolution, and the Metric System of Weights and Measures. *Algebra*.—Fundamental Rules, Fractions, Equations of the first degree, containing two or more unknown quantities.

3. LATIN.—Jones's first Latin Book, or Harkness's Latin Reader, or an equivalent amount in any other text-book. Instead of Latin, GERMAN to the extent of a full year's study will be accepted. Those who have a speaking and reading acquaintance with German will be held to an examination in the grammar.

Persons over nineteen years of age who bring evidence of having been engaged in the practice of pharmacy, in some capacity, for at least two years, and persons over twenty-one years of age who have had other professional experience approved by the Faculty, may be admitted (for a part or the whole of the course) upon passing the examination in English; but they shall not be eligible for graduation until they have passed the other examinations described in the preceding paragraph.

Other applicants will be examined in the following branches:

1. ENGLISH.—The same as given above.

2. MATHEMATICS.—*Arithmetic*.—The same as given above. *Algebra*.—The same as given above. *Geometry*.—The Elements of Plane Geometry, as given in Olney's New Elementary Geometry, or an equivalent in other authors.

3. LATIN OR GERMAN.—The applicant may offer (1) three years of preparation in Latin; or (2) two years in Latin and one year in German; or (3) one year in Latin and two years in German. Those who offer three years in Latin will be examined in the *Grammar*—a thorough preparation in the elements; in *Prose Composition*—Jones's Exercises in Latin Prose Composition, or an equivalent in some other text-book; and in *Reading*—four books of Cæsar's Commentaries, and six select Orations of Cicero, or an equivalent amount in some other text-book. Those who offer two years of Latin will be examined as above, except in the Orations of Cicero. Those who offer one year of Latin will be examined on an amount equivalent to Jones's First Latin Book. Those who offer one year of German should have had daily recitations on the Grammar during that

time, accompanied by weekly exercises in writing, and the reading of seventy-five pages of some German Reader. Those who offer two years of German should have devoted one year to the reading of some complete work in German literature.

4. **PHYSICS.**—Avery's Natural Philosophy, or an equivalent.

5. **BOTANY.**—The elements of vegetable morphology and physiology as presented in Gray's Lessons, or an equivalent, together with written descriptions of not less than fifty species of plants.

Applicants whose preparatory course of study has not conformed precisely to the requirements above enumerated will be allowed to offer, in place of a portion of these requirements, an equivalent amount in similar branches of study; and if they show, by examination, or by other evidence, that the work in these branches has been sufficient in amount, such branches will be accepted as a substitute for those omitted.

III. COURSES OF INSTRUCTION.

STUDIES OF THE FIRST YEAR.

1. *Pharmacy.*—Class studies and lectures.—Problems in parts by weight from chemical equations. Weights and volumes, specific gravity, commercial gravity scales. History of pharmacopœias, and recitations from the U. S. Ph. Problems in chemical proportions, weights, volumes, and percentages of strength. The cardinal operations of pharmacy; pulverization, solution, filtration, pressure, percolation, dialysis. The galenicals, infusions, extracts, graduated extracts, fluid extracts, tinctures, spirits, solutions, waters, syrups, cerates, etc.

2. *General Chemistry.*—Experimental lectures. The underlying principles of chemical action; descriptive chemistry of the elements and inorganic compounds; molecular constitution; the periodic law of elements; studies of synthetic production. Heat, light, and electricity.

3. *Botany and Microscopy.*—Laboratory work and lectures. Structural Botany and the delineation of cell-structure and cell-contents, tissues and tissue-systems. The microscopical examination of foods and condiments and the detection of adulterations. Reports upon commercial samples.

4. *Pharmacognosy.*—Practice in the recognition of crude drugs, chemicals, and preparations, in all their common commercial forms, the articles being studied in the hands of the student, and under the eye of the teacher.

5. *Qualitative Analytical Chemistry*.—Recitations and laboratory work, each daily.—A prefatory drill upon the notation of metallic salts. Laboratory training in reactions of acids and bases, solubilities of salts, and means of separation. Synthetic operations. Chemical equations to be written on demand. After completion of the foregoing, the course in actual analysis of unknown mixtures, solid and liquid. Mixtures presenting agents of oxidation and reduction; and the study of oxidation in the system of notation with positive and negative units of valence.

Course 5. must be fully completed before entering upon either Course 6, or Course 12, except by permission of the Faculty. This permission may be granted to practitioners of pharmacy.

6. *Pharmaceutical Preparations and Operative Pharmacy*.—Laboratory work with recitations.—The minor operations of pharmacy; prescription practice; the galenicals of the pharmacopœia, including solid and fluid extracts; the scale preparations. Distillation of acids and ethers; crystallization of salts; elaboration of chemicals. Preparation of prescriptions. Pharmacopœial methods, and the criticisms upon them. Satisfactory results required in over one hundred preparations. Problems in comparison of chemical proportions with parts by weight and by volume.

STUDIES OF THE SECOND YEAR.

7. *Materia Medica*.—Recitations.—The history and classification of medicines. Physiological effects; medicinal doses: poisonous quantities. Symptoms and antidotes. Training in the Latin and English forms of prescriptions. Criticism of prescriptions in respect to errors of quantity. Practice in the actual chirography of prescription files.

8. *Pharmacognosy* continued.—Practice in the Museum.—Studies by the class in sections, with the teacher. The ready recognition of the various articles of pharmaceutical commerce, their synonyms and uses.

9. *Pharmacology and Therapeutics*.—Lectures, elective.—The physiological action of medicines, and their relative position and value in the uses of the physician.

10. *Crystallography*.—Lectures with practice in determination.—Study of the systems of crystals, by models and specimens, and classification of the forms found in minerals and in chemical products, the class working by sections.

11. *Organic Chemistry*.—Recitations and lectures.—The systematic chemistry of carbon compounds, their molecular structure, synthetic derivation, and chemical description. Method of manufacture and means of analysis. The technology of organic products in general use.

12. *Quantitative Chemical Analysis*.—Laboratory work with lectures.—The determination of specific gravities; volumetric estimations; gravimetric determinations and separations. The results to come within specified limits of recovery.

13. *Organic Analysis*.—Laboratory work and lectures.—Pharmaceutical assays of vegetable drugs; qualitative practice with the alkaloids and with acids; volumetric estimations; the analysis of nostrums. Toxicology and analysis for poisons. Analysis of butter, lard, and other fats. Sanitary analysis of potable water. Examination of alcoholic liquors. Plant analysis. Elementary organic analysis.

14. *Pharmacy*.—Lectures and practice.—The technology of inorganic and organic articles used in pharmacy. Sources, manufacture, commercial history, prevalent impurities, standards of purity and strength, official tests, technical and public uses. Practical training in dispensing pharmacy at the *Prescription Stand*.

15. *Analysis of Urine*.—Elective.—Laboratory work and lectures.—Normal constituents, their quantitative estimation and due variations. Abnormal constituents, their recognition, estimation and pathological indications. Work by chemical and microscopical methods throughout.

SCHEDULE OF HOURS.*

FIRST YEAR.

FIRST SEMESTER.

8¼ to 9¼ Daily.	Course 5. Recitations and lectures.
9½ to 10½ Daily.	Course 2. Lectures.
10½ to 11½ Tuesday and Thursday.	Course 4. Recitations.
10½ to 11½ Wednesday and Friday.	Course 1. Lectures.
1 to 5 Daily.	Course 5. Laboratory.

SECOND SEMESTER.

8¼ to 9¼ Monday, Tuesday, Wednesday, Thursday.	} Course 3. Laboratory.
9½ to 10½ Monday, Wednesday, Thursday, Friday.	
9½ to 10½ Tuesday.	} Course 3. Lectures.
10½ to 11½ Wednesday.	
10½ to 11½ Monday, Friday.	Course 4. Recitations.
10½ to 11½ Tuesday, Thursday.	Course 2. Lectures.
11½ to 12½ Daily.	Course 1. Lectures.
1½ to 5½ Daily.	Course 6. Laboratory.

SECOND YEAR.

FIRST SEMESTER.

8¼ to 9¼ Tuesday, Thursday.	Course 10. Practice.
9½ to 10½ Monday, Tuesday, Thursday.	Course 14. Lectures.
10½ to 11½ Daily.	Course 11. Lectures.
11½ to 12½ Tuesday, Thursday.	Course 12. Lectures.
11½ to 12½ Monday, Wednesday, Friday.	Course 9. Recitations.
1½ to 5 Daily.	Course 12. Laboratory.
4 to 5 Monday, Wednesday.	Course 10. Lectures.

* A supplementary schedule of hours will be issued in September, 1893.

SECOND SEMESTER.

9½ to 10½ Monday, Tuesday.	Course 9. Lectures.
8½ to 10½ Daily.	Thesis. Library.
10½ to 11½ Tuesday, Thursday.	Course 8. Recitations.
10½ to 11½ Wednesday, Friday.	Course 13. Lectures.
11½ to 12½ Daily.	Course 7. Recitations.
5 to 6 Daily.	Course 14. Museum.
1½ to 6 Daily.	Course 13. } Laboratory.
	Thesis. }

SELECTED STUDIES.

Students are received for special lines of technical training, with liberty to take such branches as shall be found profitable to them. The several courses described as studies of the third year, below, can be taken by undergraduate students who are prepared for them, when their time permits. Among the shorter laboratory courses offered to students are the following:

Galenical Preparations and Extemporaneous Pharmacy.—Additional to Courses 6 and 14.

Pharmacognosy.—Ready recognition of medicines and apportionment of quantities by the eye. Briefer than Course 3. Advantageous to the medical student.

Pharmacopæral Analysis.—A course in the limit-tests for strength and purity of important medicines.

The Alkaloids.—A course, briefer than Course 13, upon the identification of important alkaloids.

Organic Preparations.—Practical studies of synthetic chemical methods.

Manufacturing Pharmacy.—Additional to Course 6. Experimental study of methods of production.

ELECTIVE STUDIES OBTAINED IN THE THIRD YEAR.

The following named courses are accessible to graduates, and are offered to all who are prepared to take them. They are advanced studies of the same subjects pursued in the First and Second Years, in Courses 1 to 15.

Organic Combustions.—Estimation of carbon, hydrogen, nitrogen, etc., in the organic laboratory. Work for one semester or more.

Organic Preparations.—The production of synthetic chemicals (additional to Course 6).

Purification of Chemicals.—The production of pure chemicals from the impure articles of commerce.

Drug Assaying.—Additional to Courses 13 and 14. Standardization of crude drugs, and valuation of chemicals.

Plant Analysis.—By systematic methods, for special or general purposes.

Analysis of Foods.—Additional to Course 13. The valuation of butter, lard, milk, coffee, flour, etc., and the determination of adulterants.

Water Analysis.—Sanitary and industrial analysis of waters (additional to Course 13). Mineral Water analyses (additional to Course 12).

Iron and Steel Analysis.—Training for the laboratories of steel works, rolling mills, and iron mines. The work of at least one college year, following Courses 5 and 12.

Metallurgy and Assaying.—The fire assay of gold, silver, copper, etc. Studies of the smelting works of these and other metals.

Analysis of Paints.—Practical studies of common paints of various colors. Analysis of drying oils. Must be preceded by Courses 5, 12, and 13.

The Chemistry of Dye Stuffs.—Practical and analytical studies upon artificial and natural dyes, and colored fabrics. To follow Courses 11 and 13.

Analysis of Essential Oils.—By optical and chemical methods. Must be preceded by Courses 12, 13, and 14.

Analysis of Nostrums.—Inquiries into the composition of articles of concealed composition. Must be preceded by Courses 3, 11, 13, and 14.

Toxicology.—Additional to Course 13. The recovery of poisons from foods, tissues, and the bodies of animals.

Detection of adulterations.—Additional to Courses 3 and 13. By microscopical and chemical methods, the polariscope, etc., applied to foods, condiments, and drugs.

Cryptogamic Botany.—Additional to Course 3 in microscopical studies.

Sugar Analysis.—Estimations by chemical and optical methods.

Experimental Researches.—In the pure sciences, and in the industrial arts.

IV. EXAMINATIONS.

In each of the courses of instruction enumerated (1 to 15) an examination is held at the time the work of the Course is completed by the class. The principal examinations are held in February and June.

After the examination concluding any course of study, the result is reported to the Faculty, and each student enrolled in the class is recorded as Passed, Conditionally Passed, Provisionally Passed, Not Passed, or Absent. The result is not based wholly upon the examination, but upon (1) standing in recitations through the course, (2) diligence and success in the laboratory work, and (3) standing in the examinations. If "Passed" the student receives credit for the completion of the study reported upon. If "Conditionally Passed," he must make up the condition imposed. A record of "Not Passed" requires the student to go over the regular exercises of the study again. A student "Provisionally Passed" is transferred from the immediate charge of the instructor to that of the Faculty, who will withhold credit until better scholarship is attained in other studies. A record of Provisionally Passed may be changed by the Faculty to a record of Passed, Conditionally Passed, or Not Passed, whenever such change shall be justified by the scholarship of the student in his studies in the School. Whenever the Faculty is satisfied that a student does not fulfill the purpose of his studies, he is informed, and his parents or guardians are advised that he should leave the School. If the advice be not regarded it becomes the duty of the Faculty to take mandatory action.

V. REQUIREMENTS FOR GRADUATION.

The degree of Pharmaceutical Chemist is conferred upon students who have completed Courses 1 to 14, have obtained credit for examinations in these courses in the manner above stated, and have presented a satisfactory thesis.

THE THESIS must embody the results of research by the student under the direction of the Faculty. The subject is to be selected as early as the first of March, an outline of the proposed investigation is to be presented with references to the literature in the first week of April, and the com-

pleted report, with citations of the authorities in full, is to be ready by the middle of June. For most subjects, the experimental investigation and the literary research make equally heavy demands upon the industry of the student.

Experience in the business of pharmacy is not made a requirement for a degree.

VI. A HIGHER DEGREE.

A second degree is offered to resident graduates of this School upon the following requirements, viz., the accomplishment of original research, of an extent representing the average work of a full college year, and of sufficient ability and faithfulness. Applications will be accepted by the Faculty from those who have already shown that they are adapted to engage successfully in investigations. A full record of the work, with citation of authorities, in form for publication, is required. Upon completion of the requirements, the degree of Master of Pharmacy is conferred.

VII. TEXT-BOOKS.

First Year.—In General Chemistry, Freer. In Chemical Physics, Carhart and Chute. In Qualitative Analysis, Prescott and Johnson. In Pharmacy, the U. S. Pharmacopœia and Remington's Practice. In Botany, Bessey. In Pharmacognosy, Maisch's Organic Materia Medica.

Second Year.—In Materia Medica, the Dispensatory. In Quantitative Analysis, Cheever's Select Methods. In Organic Chemistry, Berethsen. In Organic Analysis, Prescott. In Physiological Chemistry, Vaughan. Lyons' Pharmaceutical Assaying is advised.

Students who study in the same room may unite in the use of the dispensatory, and the other larger works.

For information respecting the provision of books of reference, and the use of the library, see page 8.

VIII. FEES AND EXPENSES.

THE MATRICULATION FEE is \$10 for residents of Michigan, and \$25 for others. It is paid but once and gives

privileges of permanent membership in any Department of the University.

The ANNUAL FEE is \$25 for residents of Michigan, and \$35 for others. It is paid the first year, and each year thereafter.

In the Chemical Laboratory the student pays by account for the chemicals and apparatus which he uses. The expense varies with prudence and economy, the average amount being about one dollar and twenty cents per week. Advance payment is required from time to time; the first deposit being twenty dollars.

At graduation there is a diploma fee of \$10.

Students obtain board and lodging in private families for from three to five dollars per week. Clubs are also formed, in which the cost of board is from two to three dollars a week. Room rent varies from one dollar to two dollars a week for each student. Students arriving in Ann Arbor can obtain information in regard to rooms and board by calling at the Steward's office.

Letters of inquiry may be addressed to Professor A. B. Stevens, Secretary, Ann Arbor, Mich.

STUDENTS IN 1892-93.

RESIDENT GRADUATES.

IN THE SCHOOL OF PHARMACY.

NAME.	RESIDENCE.
Shinichi Ando, Ph.C.,	<i>Tokio, Japan.</i>
Emerson Romeo Miller, Ph.C.,	<i>Ann Arbor.</i>

IN CHEMICAL STUDIES IN THE DEPARTMENT OF LITERATURE, SCIENCE, AND THE ARTS.

NAME.	RESIDENCE.
Richard Fischer, Ph.C.,	<i>New Ulm, Minn.</i>
Bernhard Conrad Hesse, Ph.C.,	<i>Saginaw, East Side.</i>
Phil Garry Hower, Ph.C.,	<i>Sandusky, O.</i>
Roy Demas Young, Phar. M.,	<i>Belleville, N. Y.</i>

IN THE DEPARTMENT OF MEDICINE AND SURGERY.

NAME.	RESIDENCE.
Robert Bruce Armstrong, Ph.C.,	<i>Saginaw, East Side.</i>
Adam John Burnhardt, Ph.C.,	<i>Hutchinson, Kan.</i>
John Henry Frost, Ph.C.,	<i>Ann Arbor.</i>

SECOND YEAR STUDENTS.

NAME.	RESIDENCE.
Francis Frederick Adams, Jr.,	<i>Milwaukee, Wis.</i>
Clarence Eugene Barnhart,	<i>Peoria, Ill.</i>
Lou Newton Benton,	<i>Kaneville, Ill.</i>
Fred Newton Chapel,	<i>Grand Blanc.</i>
Sheldon Coleman,	<i>Kalamazoo.</i>
David Lake Davoll, Jr.,	<i>Amesbury, Mass.</i>
William W. Dunning,	<i>Charlotte.</i>
Fred Faber,	<i>Pulaski, O.</i>
Lovell Farnum,	<i>Almont.</i>
John David Fromm,	<i>Toledo, O.</i>
Lillian Missouri Geddes,	<i>Winchendon, Mass.</i>
Abner B. Graham,	<i>Grand Blanc.</i>
L. D. Havenhill,	<i>Fox, Ill.</i>

Charles Otis Hill, A.B. (<i>Univ. of Tennessee</i>),	<i>Knoxville, Tenn.</i>
Charles Elsworth Jackson,	<i>Canal Fulton, O.</i>
Carl Wallace Jones,	<i>Plainwell.</i>
John Henry Jones,	<i>Cumberland, Md.</i>
George Victor Juhler,	<i>Pomeroy, O.</i>
Samuel Robert Knox,	<i>Livonia, Ind.</i>
Charles Merkel,	<i>Charlotte.</i>
George Alexander Morris,	<i>Dexter.</i>
Welles Blackwood Newton,	<i>Bowling Green, O.</i>
Frederick Holland Nickerson,	<i>Greenwich, O.</i>
Delia O'Connor,	<i>Lapeer.</i>
Bessie Gillespie Pierce,	<i>West Bay City.</i>
Karl Edwin Rudolph,	<i>Oberlin, O.</i>
William Scherer,	<i>Rochester, N. Y.</i>
Carl Edward Smith,	<i>Wilmington, N. C.</i>
Charles Henry Steincamp,	<i>Toledo, O.</i>
Rollin S. Tidrick,	<i>Bringinghurst, Ind.</i>
George McAlpine Tyng,	<i>Victoria, Tex.</i>
George Wagner,	<i>New Ulm, Minn.</i>
Silas Grant Wertz,	<i>Mt. Pleasant, Pa.</i>

FIRST YEAR STUDENTS.

NAME.	RESIDENCE.
Ransom Sidney Armstrong,	<i>Chelsea.</i>
Homor Carr Blair,	<i>Leslie.</i>
Noah Henry Bleckner,	<i>Oak Harbor, O.</i>
Clifford Egbert Corwin, A.B. (<i>Marietta Coll.</i>),	<i>New Suffolk, N. Y.</i>
Charles Ernest Crittenden,	<i>Frankfort.</i>
George Doehne, Jr.,	<i>New Ulm, Minn.</i>
Arthur Wilson Epley,	<i>Franklin, Pa.</i>
Harry Hall Hudson,	<i>Colorado Springs, Col.</i>
William Arthur Jones,	<i>Ann Arbor.</i>
Maynard Elmer Kellogg,	<i>Marshalltown, Ia.</i>
Edgar Livingstone Knapp,	<i>Saginaw.</i>
James W. T. Knox,	<i>Alvaragdo, Tex.</i>
Sol William Levy,	<i>Detroit.</i>
Edward J. Matthews,	<i>Bryon, O.</i>
Frank Leslie McClintic,	<i>Charlotte.</i>
James C. McGregor,	<i>Birch Run.</i>
Grace Ellen McNoah,	<i>Ann Arbor.</i>
Hannah A. McNoah,	<i>Ann Arbor.</i>
Allen Henry Mead,	<i>Oberlin, O.</i>
Garry Windsor Messenger,	<i>Spring Lake.</i>

Frank Albert Moon,	<i>Lowell.</i>
John Harry Moore,	<i>Philadelphia, Pa.</i>
Le Roy Hiram Moss,	<i>Maple Rapids.</i>
Thomas E. Murdock,	<i>Ypsilanti.</i>
Marion Franklin Nichols,	<i>Beach City, O.</i>
Henry Albert Parmalee,	<i>Hillsdale.</i>
Fred Lyle Robertson,	<i>Amesbury, Mass.</i>
Ralph Blair Rowland,	<i>Oberlin, O.</i>
Sebastian Fabian Schick,	<i>Mount Pulaski, Ill.</i>
David S. Schweitzer,	<i>Leipsic, O.</i>
Wilber Benson Scott,	<i>Peoria, Ill.</i>
James Seymour,	<i>Ann Arbor.</i>
Clark Elbert Smith,	<i>Grand Blanc.</i>
Isaac Franklin Steiner,	<i>Bluffton, O.</i>
George Charles Steventon,	<i>Youngstown, O.</i>
Ross Clifford Tatem,	<i>Hartwell, O.</i>
John Ludwell Tegarden,	<i>Campbellsburg, Ind.</i>
Maude Van Kleek,	<i>Ann Arbor.</i>
Marvin George Vaughan,	<i>Ann Arbor.</i>
William Franklin Warner,	<i>Belle Flower, Ill.</i>
Edward Eugene Washburn,	<i>New London, O.</i>
Horace Houghton Waters,	<i>Monroe.</i>
Carl Ernst Louis Weber,	<i>Toledo, O.</i>
Barry Wellman,	<i>Hastings.</i>
Charles Henry Williams, Ph.B., (<i>Adrian</i> <i>College</i>),	<i>Adrian.</i>
Parke Ernest Wise,	<i>Cedar Falls, Ia.</i>
Winthrop Hosmer Wright,	<i>North Adams.</i>

REGISTER OF ALUMNI.

The Chemical Laboratory of the University opened to students in 1856. A course in operative pharmacy was added to the laboratory curriculum in 1860, and was held open to those who had completed at least one of the chemical courses. From the first the laboratory was provided for the use of students of all Departments of the University, so far as chemical studies enter into the curriculum of each, and this provision in common for all the departments has continued to the present. From 1860 to 1868 Certificates of Proficiency were granted to students of any department who had completed with credit one or more of the laboratory courses of experimental study and had passed the chemical examinations. Of those who received the certificates some have followed chemistry as a profession, and their names so far as known, are given with residence and occupation in the Alumni Register of Practicing Chemists of the University.

The laboratory course in operative pharmacy had been taken by students of the Department of Medicine, students of the Department of Literature and Science, and by special chemical students, for eight years, and to the number of one hundred and twenty-one persons, before the organization of a Department of Pharmacy. Of these early students of chemistry and pharmacy a directory of residence and occupation cannot now be given.

The School of Pharmacy was organized in 1868, at first as a polytechnic division of the Department of Literature, Science, and the Arts. The charter of the School, and its power as a college of pharmacy to confer degrees, rest upon

(1) the acts of the Regents of the University in 1868 and in 1876, sustained by (2) the laws of the State in 1851, and (3) the Constitution of Michigan, in accord with the act of Congress providing for the admission of the State. The degree of Pharmaceutical Chemist, with the diploma of graduation in pharmacy, was first conferred in 1869.

THE REGISTER FROM 1869 TO 1888.

The Register of the graduates in pharmacy from 1869 to 1888 inclusive, revised last year, is still in print, and will be sent to those who apply for it. Some of the professional changes of the graduates from 1869 to 1888 are given in a supplementary list in this issue, but a complete revision prior to 1889 is not undertaken this year.

OTHER CATALOGUES OF GRADUATES AND STUDENTS.

A Catalogue of Chemists, revised from time to time, is furnished to applicants. It is a professional catalogue of practicing chemists and teachers in chemistry who have been educated at this University. The "General Catalogue of Officers and Students of the University," 1837 to 1890, 472 pages price \$1.75 in cloth, can be obtained by addressing the Steward of the University. It contains the names of Non-Graduates in the School of Pharmacy, to the number of 277, with the records of their residence and occupation so far as obtained.

THE REGISTER FROM 1889 TO 1891.

In this Register a proprietor in pharmacy is designated as a "pharmacist" only; a joint-proprietor as a "pharmacist in the company of" the house designated; and one employed in pharmacy is recorded as "with" the proprietor

named. The collegiate degrees named are those held in addition to the degree of pharmaceutical chemist (Ph. C.).

It is desired that errors or deficiencies in the Register, especially such as concern residence and occupation, shall be immediately reported with information to the Dean of the Department. The kind services of Alumni are solicited in the endeavor to keep the registration as complete as possible. A mark of interrogation (?) following any name is given as a request for the postoffice address.

GRADUATES WITH THE DEGREE OF PHARMACEUTICAL CHEMIST.

1889.

- ABBEY, CHARLES C.—Pharmacist in the firm of Field & Abbey, 314 Main st., Fort Worth, Texas.
- ALLSHOUSE, HARRY A.—Pharmacist in the company of H. A. and G. M. Allshouse, 207 Broadway, Hannibal, Mo.
- ALLWORTH, JAMES E.—Chemist at the Medical and Surgical Sanitarium, Battle Creek, Mich.
- BARRY, BENJAMIN T.—Pharmacist in the company of Ruhl & Barry, Houghton, Mich.
- BLOCK, LEO P.—With Block & Co., wholesale druggists, Chattanooga, Tenn.
- BODEN, EDWIN T.—Pharmacist, 319 Washington st., West Bay City, Mich.
- BOWEN, THOMAS W.—Chemist of Elkhorn Mining Co., Idaho City, Idaho.
- CHAMBERLIN, FRED J.—Pharmacist in the company of F. J. Chamberlin & Bro., 53 West Main st., Battle Creek, Mich.
- CHURCH, STARR K.—M. D., Univ. Mich., 1892.—Sometime Pharmacist with C. M. LaRue, West Bay City, Mich. Physician, Oakland Sanitarium, 1007 Jackson st., Oakland, Cal.
- CROWLEY, CHARLES F.—Sometime Manufacturing Pharmacist with Parke, Davis & Co., Detroit, Mich. Professor of Chemistry in Detroit College, Detroit, Mich. Address 451 Mich. ave.
- DUNN, WILLIAM L.—M. D. 1891.—Assistant to the Professor of Surgery, Univ. Mich., Ann Arbor, Mich.
- EMANUEL, JULIA E.—Prescriptionist, Meyer Bro. & Co., Fort Wayne, Ind.

- FLINT, MERRILL S.—Formerly Pharmacist in charge of the drug department of the Chateauquay Ore and Iron Co., Lyon Mountain, N. Y. With The Racquette River Paper Co., Potsdam, N. Y.
- FRANZ, HENRY S.—Formerly with James R. Hofflin & Co., Minneapolis, Minn. Pharmacist in the firm of M. H. Andrews & Co., North Vernon, Ind.
- FROST, HENRY J.—Formerly Pharmacist, 208 S. Washington ave., Saginaw, E. S., Mich. In Department of Medicine and Surgery, Univ. Mich.
- GRIFFEN, TRUMAN.—Pharmacist with Jas. R. Hofflin & Co., Minneapolis, Minn. Address 2216 Fourth ave., South.
- HEATH, ROLLA M.—In Pharmacy with Gale & Blocki, 34 Washington st., Chicago, Ill.
- HESSE, BERNHARD C.—B. S., Univ. of Mich. 1893.—Sometime Pharmacist with Prall & Jones, East Saginaw, Mich. Assistant in Qualitative Analysis in Univ. Mich. 1890-93. Fellow in Chemistry, University of Chicago, Chicago, Ill.
- HIRTH, GEORGE J., JR.—M. D. 1891—Famulus an der Königlichen chirurgischen Universtätés Klinik, Berlin.
- JANNEY, RUSSELL L.—Pharmacist. Eagle Pharmacy, Paso Robles, San Luis Obispo Co., Cal.
- JENTER, CHRISTIAN G.—Resident Graduate in Metallurgical Chemistry, 1889-90. Assistant in Quantitative Analysis, Univ. Mich., 1890-91. Assistant Chemist at the New York State Agricultural Experiment Station, Geneva. N. Y.
- JOHNSON, BURT L.—Pharmacist for H. H. Severance, Middleville, Mich.
- KEITH, FRANKLIN R.—In Pharmacy, Kansas City, Mo.—(?)
- KIRCHGESSNER, WILLIAM C.—Pharmacist with H. and F. Thum. (Ph. C. of '78 and '80), 84 Canal st., Grand Rapids, Mich.
- KRAMER, LEONARD G.—Pharmacist, Chesterton, Ind.
- KRUG, WILLIAM H.—Assistant Chemist in Chemical Division of the U. S. Department of Agriculture, Washington, D. C.
- LOCKWOOD, WILLIAM S.—Pharmacist with Henderson, Jackson, Mich.—(?)
- MEHLIOPP, FRED W.—In the firm of F. A. Tripp & Co., 4 Clark st., Chicago, Ill.
- PARKINSON, FERDINAND E.—Pharmacist in the firm of Parkinson & Parkinson, Saginaw, W. S., Mich.
- ROCKWELL, MARK.—M. D. 1891.—Assistant Physician of Northern Michigan Asylum, Traverse City, Mich., 1891-93. Physician and Surgeon, Room 344 Jones and Summer Block, corner Main and Pipestone sts., Benton Harbor, Mich.
- ROWLAND, CHARLES W.—Pharmacist, 23 South Main st, Oberlin, Ohio.

- SCHETTLER, GEORGE M.—Pharmacist. The successor of A. E. Holt, corner Fort and Cass sts., Detroit, Mich.
- SMITH, OSCAR J.—Manufacturing Chemist with the Stewart & Holmes Drug Co., Seattle, Washington.
- SPENKER, LOUIS J.—Manufacturing Pharmacist with the Wolle Chemical Co., Toledo, O. In charge of the laboratory. Address 356 South Erie st., Toledo, O.
- THOMPSON, JOHN.—Formerly with Myron Calkins, Clinton, Mich. Pharmacist in the firm of S. Van Etta & Son, Hudson, Mich.
- VAN ETTA HARRY S.—Pharmacist in the firm of S. Van Etta & Son, Hudson, Mich.
- VOGEL, ALBERT F.—Pharmacist with Jas. R. Hofflin & Co., Minneapolis, Minn.—until 1892.
- WEIGHTMAN, MATTHEW, JR.—In Pharmacy, Kansas City, Mo.—(?)
- WHELOCK, WILLIAM C.—Manager of East End Drug Store of Colwell Bros., 1324 East Main st., Jackson, Mich.
- WOOD, JOSEPH B.—For some years a Pharmacist. Sometime in chemical studies in Department of Literature, Science and the Arts, Univ. Mich. Now at Patterson, N. J.
- ZEIG, AUGUST C.—Manufacturing Chemist in the Pharmaceutical Laboratory of Clinton E. Worden & Co., San Francisco, Cal.

1890.

- ARMSTRONG, ROBERT B.—Sometime Assistant Chemist at New York State Agricultural Experiment Station, Geneva, N. Y. Assistant in Pharmacy, Univ. Mich. 1891-92. In Dept. of Medicine, U. of M.
- BAERT, GEORGE H.—M. D. Univ. Penn., 1893.—Instructor in Chemistry at Purdue University School of Pharmacy, in 1890-91. Address Zeeland, Mich.
- BAKER, CHARLES W.—Pharmacist in the firm of George R. Baker & Son, 205 South Main st., Mt. Vernon, O., also pursuing studies in Kenyon College, O.
- BAKER, FRED W.—President of the Baker-Levy Chemical Co., 167 Wabash ave., Chicago, Ill.
- BOYCE, SAMUEL R.—Instructor in Pharmacy at Kansas State University, Lawrence, Kan.
- COLLINS, WILLIAM E.—Pharmacist in the company of Will E. Collins & Co., Owosso, Mich.
- HAWES, GEORGE S.—Prescriptionist with C. B. Baguley, 61 North State st., Chicago, Ill.
- *HOLLIS, CHARLES WILLIAM.—Entered Department of Medicine and Surgery, Univ. Mich., Oct., 1890. DIED in March, 1891.
- HUBER, LOUIS H.—Pharmacist with H. Huber, M. D., Ottawa, O.

- ILHARDT, WILLIAM.—Ph. G., St. Louis Coll. Phar., 1888. Pharmacist with Prof. J. M. Good, 2348 Olive st., St. Louis, Mo. Assistant in the Microscopical Laboratory of the St. Louis College of Pharmacy.
- JARMAN, ERNEST M.—In Pharmacy, corner 9th and Francis sts., St. Joseph, Mo.
- KEBLER, LYMAN F.—B. S. Chem. 1881, M. S. 1892—Assistant in Qualitative Chemistry, Univ. Mich. Analytical and Manufacturing Chemist with Smith, Klein & French Co.
- KIRBY, MAURICE S.—Wholesale dealer in fish, Grand Haven, Mich.
- KIRBY, THOMAS E.—Sometime in Pharmacy with H. J. Millburn & Co., Detroit, Mich. Wholesale dealer in fish, Grand Haven, Mich.
- KLINGMAN, THEOPHIL.—M. D. Univ. Mich. 1892. Physician, corner Center and Washington aves., Bay City, Mich. Member of M. S. P. A.
- *LEVY, MORITZ M.—Sometime a Pharmacist at Charlotte, Mich. DIED.
- MARTZLOFF, CHARLES E.—Member of the firm of William Coulson Drug Co., Buffalo, N. Y. With Jas. A. Darlington, Chemist, 132 William and 553 Clinton sts., Buffalo, N. Y.
- MCGUIRE, BEN J.—In Pharmacy in Auburn, Neb.—(?)
- MEYER, OTTO P.—Manufacturing and Analytical Chemist in charge of the laboratory of Meyer Bros. Drug Co., importers and wholesale druggists, Broadway, Clark ave., and Fourth st., St. Louis, Mo. Member of the St. Louis Club of Microscopists.
- MILNER, THOMAS J.—Pharmacist, Big Rapids, Mich.
- NIERMANN, HERMAN G.—M. D., Univ. Mich., 1892.
- PALMER, WALLACE.—Pharmacist with E. A. Calkins, Ann Arbor, Mich.
- PURTSCHER, CHRISTIAN.—Pharmacist with Frank Inglis, corner Griswold and State sts., Detroit, Mich.
- SCHEUERMAN, WILL M.—Pharmacist with C. E. Spayd, 502 Monroe st., Toledo, O.
- SCHMID, OSCAR F.—Ph. B., 1889.—Sometime Assistant Chemist of Iron and Steel Works at Joliet, Ill. In wholesale drug business, Jackson, Mich.
- SHERRARD, CHARLES C.—Analytical Chemist for Frederick Stearns & Co., Manufacturing Pharmacists, Detroit, Mich.
- THAYER, HENRY A.—Pharmacist with J. L. Thayer, Sherman, N. Y.
- TIBBALS, WILLIAM J.—Sometime Assistant Chemist, at New York State Agricultural Experiment Station, Geneva, N. Y. Graduate student in Chemistry, Univ. Mich. 1891-92. Chemist for J. H. Miller, Analytical and Consulting Chemist, 203 Ellecott st., Buffalo, N. Y.

- WAIT, CORA L.—Dispensing Pharmacist in Northern Michigan Insane Asylum, Traverse City, Mich.
- *WESTFALL, DEAN M.—Sometime in Pharmacy with C. D. Woodworth, Ellensburg, Wash. DIED, Nov. 10, 1892.
- WISE, CLARENCE H.—Pharmacist in the company of Wise & Bryant, Cedar Falls, Ia.
- WOOD, HOMER R.—Pharmacist with Dr. J. N. McCondless, Prescott, Arizona.
- YOUNG, ROY D.—Phar. M., Univ. M., 1892.—Assistant Chemist at New York State Agricultural Experiment Station, Geneva, N. Y., in 1890-91. Assistant in Pharmacy, Univ. Mich.

1891.

- ADAMS, ARTHUR W.—Sometime in Pharmacy with Hall & Hilton, Bay City, Mich. Chemist with Fraser Tablet Triturate Co., New York City.—(?)
- ANDO, SHINICHI.—Assistant Chemist at New York State Agricultural Experiment Station, Geneva, N. Y.
- ASHLEY, WILLIAM F.—Prescriptionist with Mayell-Hopp Co., 198 Euclid ave., Cleveland, Ohio.
- BERRY, ROBERT W.—Huntington, Ind.
- BIRD, HARRY L.—With A. L. Walker, (Ph. C., '79), Pharmacist 413 Woodward ave., Detroit, Mich.
- BRIGGS, PERRY.—Apothecary to the University Hospital, Ann Arbor, Mich.
- BURGESS, HOMER.—Prescriptionist, Emergency Hospital, Washington, D. C. Address 119 New York ave., Northwest.
- CAMPBELL, ARTHUR.—Manager of the Pharmacy of Campbell & Son, Crystal Falls, Mich.
- CHURCHILL, ALFRED P.—With S. P. Churchill, Pharmacist, 36 Euclid ave., Cleveland, O.
- CORBIN, JOHN W.—Graduate student in Metallurgical Chemistry, Univ. Mich., 1891-92. Chemist, New Furnace Illinois Steel Co., South Chicago, Ill.
- DAVIS, FRANK F.—Pharmacist, corner of Eleventh and West sts., Washington, D. C.
- GREAVES, EDITH E.—No. 2226 East Fifth st., Dayton, O.
- GREEN, FRANK A.—D. D. S., Chicago Dental College. Grass Lake, Mich.
- GRIES, JOSEPH M.—Pharmacist, Salt Lake City, Utah.
- HEARNE, JOSEPH C.—Pharmacist with E. D. Stamper, 49 East Short st., Lexington, Ky.
- HITCHCOCK, JOHN E.—Pharmacist in "Medical Hall," Plattsburg, N. Y.

- HUBBARD, JOHN L.—In the firm of Clark & Hubbard, Pharmacists, Grass Lake, Mich.
- HUESTED, FRANK P.—Instructor in Pharmacy in the Albany College of Pharmacy. In service for the New York State Board of Health, Albany, N. Y.
- KAHN, HARRY.—Ph. G., Illinois College of Pharmacy, 1889.—Phar. M., Univ. Mich.*—Assistant in Pharmacy in the Illinois College of Pharmacy, 40 Dearborn st., Chicago, Ill.
- KENNEDY, EDWARD M.—Pharmacist with George McDonald, Kal-amazoo, Mich.
- KING, JOSEPH C.—Manufacturing Chemist with W. D. White & Co., Wilkes Barre, Pa.
- LOUDENBECK, HARRY C.—With J. S. Stiles, druggist, 1140 Millard ave., Chicago, Ill.
- McGEE, THOMAS H.—Lansing, Mich.
- MURRAY, BENJAMIN L.—Assistant Chemist in the New York State Agricultural Experiment Station Geneva, N. Y.
- PECK, FRANK S.—Graduate student in Metallurgical Chemistry in the University of Michigan until April 1892. Chemist in the company of H. L. Hollis & Co., Analytical Chemists and Mining Engineers, 804 Perry-Payne Building, Cleveland, O.
- RUSSELL, DORIAN M.—Prescriptionist in Thum's Pharmacy, 166 West Bridge st., Grand Rapids, Mich.
- SCHMIDT, WALTER K.—Pharmacist in the firm of Thum Brothers & Schmidt, Grand Rapids, Mich. H. Thum, class of '78; F. Thum, class of '80.
- SHEPHERD, FRANK L.—Sometime Assistant Chemist with the William S. Merrell Chemical Co., manufacturers, Cincinnati, O.—In Southern California for the benefit of health.
- SMITH, HENRY F.—Pharmacist with H. Burgess, Oberlin, O.
- SNOW, HENRY P.—Prescriptionist with William H. Quinn, Ballston Spa., N. Y.
- VAN SCHOONHOVEN, CARRIE G.—Pharmacist with J. M. Gries (Ph. C., '91), Salt Lake City, Utah.
- WHITNEY, JAMES W.—Pharmacist with A. W. Twiss, Bethel, Conn.

1892.

- ALLEN, HARRIS E.—B. S., Fayette College. Pharmacist with Wilson & Lee, Morënci, Mich.
- ATWOOD, DANIEL W.—Pharmacist with E. G. Stucky, corner Wylie and Fulton sts., Pittsburg, Pa.
- BIRKMIER, HARRY W.—Pharmacist at 902 Cherry st., Toledo, O.

*Ph. G., July 25, 1889; Phar. M., June 25, 1891. Has not received the degree of Ph. C.

- CADY, WALTER B.—Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, N. Y.
- CARSOW, RUDOLPH B.—Chemist in Laboratory of Allan & Pfeiffer Manufacturing Co., 619 North Main st., St. Louis, Mo.
- CADY, BERT E.—Chemist with the Natural Gas Co. Address, box 159 North Indianapolis, Ind.
- COOK, AMOSA D.—Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, N. Y.
- DRAKE, FRED D.—With Wm. S. Merrell Chemical Co. In charge of Specialty Department, 175 E. 5th st., Cincinnati, O.
- FISCHER, RICHARD.—Assistant in Qualitative Analysis, Univ. Mich.
- HAAG, ELLIOTT H.—Pharmacist in the company of E. H. Hagg & Co., 601 Monroe st., Toledo, O.
- HEARD, MARY K.—453 Fourth st., Manistee, Mich.
- HOWER, PHIL. G.—Sandusky, O.—(?)
- JACKSON, GEO. R.—A. B., Oberlin College. Detroit, Mich.—(?)
- KELLY, WM. A.—Pharmacist with W. W. Kelly, Ottawa, O.
- KLEIN, JULIUS M.—Chelsea, Mich.—(?)
- LANDERS, ALFRED E.—Fredonia, N. Y.—(?)
- LOHRSTORFER, JOSEPH.—Port Huron, Mich.—(?)
- MILLER, EMERSON R.—Resident-Graduate in Pharmacy, 1892-3.
- PARSONS, JAMES H.—In charge of Analytical Department of J. B. Ford Chemical Works, Wyandotte, Mich.
- PATTISON, GEORGE H.—Chemist with Charles B. Baker & Son, Windsor Park, Ill.
- PUSCH, OSCAR C.—Pharmacist with L. Wilson, 139 South 10th st., Lincoln, Neb.
- ROBINSON, THOMAS E.—Pharmacist at Lansing, Mich.
- SANDFORD, WILLIAM E.—Instructor in Pharmacy, University of Illinois, Champaign, Ill.
- SELTZER, LEONARD A.—Pharmacist with F. W. R. Perry, (Ph. C., 1880). 707 Woodward ave., Detroit, Mich.
- SHEEDY, JOHN P.—Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, N. Y.
- SOETJE, OSCAR H.—Pharmacist in the company of Tiarks & Soetje, Monticello, Iowa.
- SUTTON, JOHN B.—Pharmacist with U. D. Bristol & Son, Lapeer, Mich.
- WARNER, GEORGE J.—Birmingham, Mich.
- WELLS, JOSEPH J.—Pharmacist in the firm of J. E. Wells & Son, Athens, Mich.

CHANGES 1869-1888.*

- ALLEN, CHALMERS P.—1888.—Pharmacist Midland st., near C. S. & M. depot, West Bay City, Mich.
- *BAKER, CHARLES.—1887.—DIED in Owosso, Mich., March 1892. For sometime with C. P. Parkhill & Son, Pharmacists at Owosso, Mich.
- BLISS, HALE.—1869.—Late Pharmacist of Cook County Hospital. Engaged for the City Board of Health, Chicago, Ill.
- BURKE, WILLIAM H.—1884.—Pharmacist, Grand River ave., and 291 Woodward ave., Detroit, Mich.
- CHURCHILL, ORIN L.—1876.—Pharmacist in the company of Churchill & Webster, Jamestown, North Dakota.
- CLARK, EDWARD W.—1886.—Ph. G., New York College of Pharmacy, 1884—Pharmacist, 24 East Main st., Amsterdam, N. Y.
- CRAIG, JOHN T.—1884.—Chemist in charge of laboratory, 2 West 47th st., New York, for Caswell, Massey & Co., Manufacturing and Dispensing Pharmacists. Stores at Newport, R. I.; 1121 Broadway, and 578 Fifth ave., New York City.
- DRYFOOS, LOUIS A.—1887.—Ph. D., Zurich, 1891. Dissertation on "Piazine Derivatives."
- GREENE, ARTHUR L.—1882.—Professor of Chemistry and Dean of Purdue School of Pharmacy, LaFayette, Ind.
- GREENE, MORRIS A.—Pharmacist with Baldwin Brothers, Jamestown, North Dakota.
- HIRTH, PAUL H.—1886.—Commercial agent for John Wyeth & Bro., Philadelphia, Pa. Address 101 Summit st., Toledo, O.
- IRWIN, JOHN L.—1880.—M. D., Univ. Mich., 1889. From 1880 to 1887 chemist of the William S. Merrell Chemical Co., Cincinnati, O. In 1889-90, in medical studies in Vienna. Member of American Medical Association. Physician, 230 Third st., Detroit, Mich.
- JENSEN, PAUL C.—1879.—M. D., Univ. Mich., 1882.—Physician, Manistee, Mich.
- *JOHNSON, JOHN S.—1877.—DIED at Newark, O., May 22, 1891. For some years a Pharmacist in Newark, in company with E. E. Gatchell. Ph. C. (1881), Hudson, Wis.
- KENNEDY, EZRA J.—Engaged in the publishing house of "Pharmaceutical Era," Detroit, Mich.
- KIDDER, SAMUEL, JR.—1888.—In charge for E. L. Scholz, Pharmacist, 16th and Curtis st., Denver, Col.
- LANER, BENJAMIN J.—Pharmacist, 462 East 63d st., Chicago, Ill.
- LEVY, HENRY.—1888.—Secretary and Treasurer of the Baker-Levy Chemical Co., 167 Wabash ave., Chicago, Ill.
- LEWIS, I. GILES—Phar. M., 1891.—Chemical studies, Univ. Mich., 1864-1867. Wholesale druggist and chemist in the firm of Robert Stevenson & Co., 92-94 Lake st., Chicago, Ill.

- MCNEEL, MARY.—1882.—MRS. JOHN O. REED.—B. L., Univ. Mich., 1885. Sometime teacher in the High School at Saginaw.—Ann Arbor, Mich.
- MUMMERY, ARTHUR E.—Pharmacist with Frank Inglis, Detroit, Mich.
- PASSOLT, HERMAN A.—Analytical Chemist. Chemist for Standard Ore Co., Derrett, Minn.
- *PENGR, CHARLES P.—1883.—M. D. Univ. Mich., 1881.—DIED in Boston, Mass., Jan. 31, 1892.—For some years Professor of Materia Medica and Botany in the Massachusetts College of Pharmacy, and of Dental Histology and Microscopy in the Boston Dental College.
- PENNINGTON, JOHN E.—1888.—Travelling salesman for the F. A. Davies Co., 1231 Filbert st., Philadelphia, Pa. Home address Detroit, Mich.
- RAYNALE, FRANK B.—1888.—Chemist with Farrand, Williams & Clark, Detroit, Mich.
- REULE, GUSTAVE A.—1887.—In charge of a Pharmacy for A. J. Baumhardt, (Ph. C., 1887) Hutchinson, Kansas.
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- SHAPER, JOHN H.—M. D., Univ. Mich., 1891.—Instructor in Pharmacy in Purdue University, 1888-9.—Physician, 618 Madison st., Toledo, O.
- SMITH, ALBERT W.—1886.—B. S., Case School, 1887.—Ph. D., Zürich, 1891.—Assistant Professor of Chemistry and Metallurgy in the Case School of Applied Science, Cleveland, O.
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- STABLER, LAIRD J.—1885.—B. S., Purdue University, 1890.—Professor of Chemistry and Physics in the Southwest Kansas College, Winfield, Kansas.
- STONE, CLARENCE G.—1877.—For sometime Vice-President of the firm of H. T. Millburn & Co., Manufacturing Pharmacists, 81 Woodward ave., Detroit, Mich. Address:
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- WARREN, WILLARD MCK.—1887.—Pharmacist, 1859 Grand, Denver, Col.
- WATERMANN, CHAUNCEY N.—1888.—Chemist for the New York Dye Wood Extract and Chemical Co., 55 Beekman st., New York, with works in Brooklyn, N. Y.
- ZWICK, KARL G.—1888.—In 1890-91 a resident student with Prof. R. Fresenius, Wiesbaden, Germany. Pharmacist, 11th and Madison sts., Covington, Ky.

Alumni Association

OF THE

SCHOOL OF PHARMACY, UNIVERSITY OF MICHIGAN.

EXTRACTS FROM THE CONSTITUTION.

*"The objects shall be to preserve friendship * * *; to keep alive our interest in science * * *; to be able to act in unison for the establishment of Pharmacy as a scientific profession * * *; to sustain the interests of thorough education in Pharmacy."*

"All graduates of this school and all who have been recommended to the Regents for graduation shall be declared members of the association."

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Contents.

	PAGE.
The Faculty.....	3
GENERAL INFORMATION:	
The Educational Scope of the School.....	5
The Call for Chemists	5
The Utility of Chemical Training	6
The Extent of the Required Work.....	6
Laboratory Facilities.....	7
Facilities of the Library.....	7
University Privileges.....	7
Facilities for Practicing Pharmacists, Partial Courses, Opportunities for Research	7
Preparation for the State Examination in Pharmacy.....	8
The Requirements for admission.....	9
Admission to the School for a Special Course.....	9
Students Begin at the Opening of the College Year.....	10
As to Business Experience.....	10
ANNOUNCEMENT FOR 1893-94:	
I. Calendar of the College Year.....	11
II. Requirements for Admission.....	11
III. Courses of Instruction:	
Studies of the First Year.....	13
Studies of the Second Year.....	14
Schedule of Hours.....	15
Selected Studies.....	16
Studies in the Third Year.....	16
IV. Examinations	17
V. Requirements for Graduation	18
VI. A Higher Degree	19
VII. Text-Books	19
VIII. Fees and Expenses.....	19
STUDENTS IN 1892-93:	
I. Resident Graduates	21
II. In Second Year.....	21
III. In First Year	22
REGISTER OF THE ALUMNI OF THE SCHOOL OF PHARMACY, with present Resi- dence and Occupation.....	24
THE ALUMNI ASSOCIATION.....	35

